Title (en)

Salts of polyaspartic acid by high temperature reaction

Title (de)

Polyasparaginsäuresalze erhalten durch Hochtemperaturreaktion

Title (fr)

Sels d'acide polyaspartique obtenus par réaction à haute température

Publication

EP 1085033 B1 20050518 (EN)

Application

EP 00124271 A 19930507

Priority

- EP 93911150 A 19930507
- US 88291992 A 19920514
- US 737693 A 19930121

Abstract (en)

[origin: WO9323452A1] Polyaspartate, useful for inhibition of incrustations due to materials causing hardness in water and of value in detergent formulations, can be prepared by reacting maleic acid or fumaric acid with ammonia in a molar ratio of 1:1-2.1 at temperatures greater than 170 C., followed by conversion of the polymer formed in this reaction to a salt of polyaspartic acid by basic hydrolysis.

IPC 1-7

C08G 69/10; C08G 73/10; C08G 69/48; C11D 3/37; C02F 5/12

IPC 8 full level

C02F 5/12 (2006.01); **C05G 3/00** (2006.01); **C08G 69/00** (2006.01); **C08G 69/10** (2006.01); **C08G 69/48** (2006.01); **C08G 73/00** (2006.01); **C08G 73/10** (2006.01); **C11D 3/37** (2006.01); C02F 1/00 (2006.01)

CPC (source: EP KR US)

C02F 5/12 (2013.01 - EP US); **C02F 5/125** (2013.01 - EP US); **C05G 3/00** (2013.01 - EP US); **C08G 69/00** (2013.01 - EP KR US); **C08G 69/10** (2013.01 - EP US); **C08G 69/48** (2013.01 - EP KR US); **C08G 73/1092** (2013.01 - EP US); **C11D 3/3719** (2013.01 - EP US); C02F 1/001 (2013.01 - EP US)

Cited by

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Designated contracting state (EPC)

AT BE CH DE DK ES FR GB IT LI NL PT SE

DOCDB simple family (publication)

WO 9323452 A1 19931125; AT E204593 T1 20010915; AT E295863 T1 20050615; AU 4239393 A 19931213; AU 674144 B2 19961212; CA 2135638 A1 19931125; CA 2135638 C 20030805; DE 69330641 D1 20010927; DE 69330641 T2 20020307; DE 69333816 D1 20050623; DE 69333816 T2 20060202; DK 0641364 T3 20011105; DK 1085033 T3 20050725; EP 0641364 A1 19950308; EP 0641364 A4 19950110; EP 0641364 B1 20010822; EP 1085033 A2 20010321; EP 1085033 A3 20020703; EP 1085033 B1 20050518; ES 2161717 T3 20011216; ES 2241540 T3 20051101; JP 3220152 B2 20011022; JP H07509019 A 19951005; KR 100264498 B1 20000901; KR 950701657 A 19950428; NO 307185 B1 20000221; NO 944224 D0 19941104; NO 944224 L 19941104; PT 641364 E 20020130; US 5288783 A 19940222; US 5367047 A 19941122; US 5773565 A 19980630; US 6072025 A 20000606

DOCDB simple family (application)

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